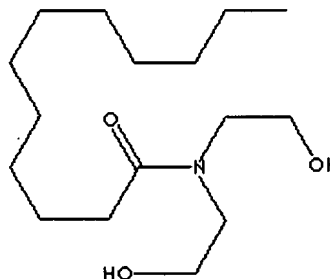




## LAURIC DIETHANOLAMIDE

### PRODUCT IDENTIFICATION

CAS NO. 120-40-1  
 EINECS NO. 204-393-1  
 FORMULA  $\text{CH}_3(\text{CH}_2)_{10}\text{C}(=\text{O})\text{N}(\text{CH}_2\text{CH}_2\text{OH})_2$   
 MOL WT. 287.44  
 H.S. CODE



### DERIVATION

TOXICITY Oral rat LD50: 2700 mg/kg

SYNONYMS Dodecyl-N,N-bis(2-hydroxyethyl) Amide; Lauric DEA; Bis(2-hydroxyethyl)lauramide; Diethanolamine lauric acid amide; diethanollauramide; Diethanol lauric acid amide; N,N-diethanollauramide; N,N-diethanollauric acid amide; N,N-bis(hydroxyethyl)lauramide; Lauramide DEA; N,N-bis(2-hydroxyethyl)dodecanamide; N,N-bis(2-hydroxyethyl)dodecanamide;

### CLASSIFICATION

#### PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE yellowish waxy solid  
 MELTING POINT 42 - 47 C  
 BOILING POINT 239 - 244 C  
 SPECIFIC GRAVITY 0.98 - 0.99  
 pH 10  
 SOLUBILITY IN WATER soluble

### AUTOIGNITION

NFPA RATINGS Health: 1; Flammability: 1; Reactivity: 0

FLASH POINT > 100 C

STABILITY Stable under ordinary conditions

### APPLICATIONS

Alkanolamides are nonionic surfactants impart excellent viscosity enhancing and foam stabilization in anionic based systems like hand washing liquids, shampoos, body cleansers and other personal care products. They act as lubricant agent, thickening agent and wetting agent. Their very good emulsifying property also provides applications in the field of pharmaceuticals, agricultural preparations, and textile processing; rust inhibiting, latex stabilizing, anti-static function in textiles, dye-leveling, waterproofing and water-in-oil additives as well as very good emulsifying. Alkanolamides are manufactured by condensation of mono- or diethanolamine and the methylester of long chain fatty acids, whereby the monoethanolamides are further ethoxylated.

### SALES SPECIFICATION

APPEARANCE yellowish waxy solid  
 CONTENT 90.0% min  
 FREE AMINE 5.0 - 10.0%  
 pH 10 (2%)  
 COLOR, GARDNER 2 max  
 TRANSPORTATION  
 PACKING 190kgs in drum  
 HAZARD CLASS  
 UN NO.  
 OTHER INFORMATION

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## Chemical Database

### Bis(2-Hydroxyethyl) Lauramide

#### Identifications

- **CAS Number:** 120-40-1
- **Caswell Number:** 519A
- **Synonyms/Related:**
  - (C12-22)-Fatty acids, diethanolamide
  - Alkamide LE
  - Amides, C12-22, N,N-bis(hydroxyethyl)
  - Aminon L 02
  - Bis(2-Hydroxyethyl) Lauramide
  - Chemistat 2500
  - Chemstat LD 100
  - Clindrol 100L
  - Clindrol 101CG
  - Clindrol 200L
  - Clindrol 203CG
  - Clindrol 210CGN
  - Clindrol superamide 100L
  - Coco diethanolamide
  - Coconut oil amide of diethanolamine
  - Comperlan LD
  - Condensate PL
  - Crillon L.D.E.
  - Crillon LDE
  - Diethanolamine lauroylamide
  - Diethanollauramide
  - Dodecanamide, N,N-bis(2-hydroxyethyl)-
  - Duspar LA 2000
  - EMID 6511
  - Empilan LDE
  - Ethylan MLD
  - Hetamide ML
  - Incromide LR
  - Lalmin D
  - Lankrostat JP
  - Lauramide DEA
  - Lauramido DEA
  - Lauric acid diethanolamide
  - Lauric acid diethanolamine condensate
  - Lauric acid diethanolamine condensate (1:1)
  - Lauric acid diethanolamine condensation
  - Lauric diethanolamide
  - Lauroyl diethanolamide
  - Lauroyldiethanolamine

- Lauryl diethanolamide
- LDA (surfactant)
- LDE
- Mackamide LL
- Mackamide LLM
- Methyl laurate-diethanolamine condensate
- Monamid 150-LW
- Monamide 150LW
- N,N-Bis(2-hydroxyethyl) dodecanamide
- N,N-Bis(2-hydroxyethyl) lauramide
- N,N-Bis(2-hydroxyethyl) lauroylamide
- N,N-Bis(2-hydroxyethyl) laurylamide
- N,N-Bis(beta-hydroxyethyl) lauramide
- N,N-Bis(hydroxyethyl) lauramide
- N,N-DI(2-HYDROXYETHYL) LAURAMIDE
- N,N-Diethanollauramide
- N,N-Diethanollauric acid amide
- N,N-Diethylollauramide
- Ninol 4821
- Ninol aa-62 extra
- Ninol aa62
- Ninol P-621
- Onyxol 345
- Rewomid DL 203/S
- Rewomid DLMS
- Richamide 6310
- Richamide STD
- Rolamid cd
- Standamid LD
- Standamidd Id
- Steinamid DL 203 S
- Stepan LDA
- Super Amide L-9A
- Super Amide L-9C
- Synotol L-60
- Unamide J-56
- Varamid ml 1
- Varamide ML 1

#### Related Resources

- **USDOT Hazardous Materials Table 49 CFR 172.101**

An online version of the USDOT's listing of hazardous materials from 49CFR 172.101. This table can be sorted by proper shipping name, UN/NA ID and/or by primary hazard class/division.

- **2004 ERG (Emergency Response Guidebook)**

Have you ever wondered what those four digit numbers on the placards on the side of trucks and rail cars mean? Our online 2004ERG will give you your answer. This is an online version of the guidebook produced by the USDOT for first responders during the initial phase of a Dangerous goods/HazMat incident.

- **US DOT Hazardous Materials Transportation Placards**

Hazardous materials placards (DOT placards) are required when shipping hazardous materials in the United States, Canada and Mexico. These pages provide US DOT definitions for each hazmat placard.

- **Guide for Handling Household Chemicals**

Things you can do to make your home safer.

- **Molarity, Molality and Normality**

Introduces stoichiometry and explains the differences between molarity, molality and normality.

- **Molar Mass Calculations and Javascript Calculator**

Molar mass calculations are explained and there is a JavaScript calculator to aid calculations.

- **Periodic Table of Elements**

Provides comprehensive data for each element of the periodic table of elements including up to 40 properties, names in 10 languages and common chemical compounds. Information also provided for 3,600 nuclides and 4,400 nuclide decay modes.

**Editor's note:** Some chemicals in this database contain more information than others due to the original reason this information was collected and how the compilation was accomplished.

While working with material safety data sheets (MSDS), I found that manufacturers sometimes used obscure names for constituent chemicals and I didn't always have a good idea of what I was dealing with. To resolve this problem, over the years, I compiled chemical names and identifiers into a personal database, cross referencing regulatory and health safety information when possible. Colleagues and friends eventually started suggesting that I make my data available on this website so that others could benefit from my efforts -- which I finally did in 2004. The more common, regulated and/or hazardous a chemical is, the more information I will have likely collected it.

**Further notes are below.**

### Trademarks

If you are aware of any synonyms listed above that are registered trademarks, please contact us with relevant information so that trademarks can be appropriately noted.

### Notes about mixtures

Some chemicals listed in this database are not pure chemical compounds, rather they are mixtures/solutions of chemicals. It is not uncommon for wide range of molar ratios of a mixture to be lumped together as "synonyms" of the same "chemical". In some instances chemicals that are very similar from a health & safety and/or regulatory standpoint also may have been lumped together.

### Reference Sources

Data for this database was compiled from: hundreds of Material Safety Data Sheets (MSDS) of common industrial and household products; the Hazardous Materials Table from the United States "Code of Federal Regulations" title 49 section 172.101; the National Institute for Occupational Safety and Health Pocket Guide to Chemical Hazards; the US DOT 1996, 2000 & 2004 Emergency Response Guidebooks; U.S. National Library of Medicine and many other related resources.

### Disclaimer

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To ensure regulatory compliance when transporting hazardous materials or dangerous goods, one must receive proper training and certification from a qualified instructor and refer to the current year's Code of Federal Regulations Title 49 (49CFR) or your country's shipping regulations. In matters regarding workplace safety, refer to current OSHA regulations (29CFR) and NIOSH guidelines or your own country's health and safety regulations. No one should ever enter into a hazardous environment without proper training from qualified instructors.

### Citing this page

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# Diethanolamine Help us provide free content to the world by donating today!

From Wikipedia, the free encyclopedia

**Diethanolamine**, often abbreviated as **DEA**, is an organic chemical compound which is both a secondary amine and a dialcohol. A dialcohol has two hydroxyl groups in its molecule. Like other amines, diethanolamine acts as a weak base.

Other names or synonyms are bis(hydroxyethyl)amine, diethylolamine, hydroxydiethylamine, diolamine, and 2,2'-iminodiethanol.

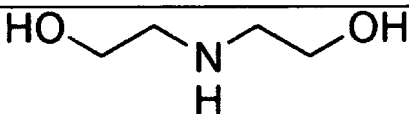
DEA and its chemical variants are common ingredients in cosmetics and shampoos, where they are used as to create a creamy texture and foaming action. Variants of DEA include lauramide diethanolamine, coco diethanolamide, cocoamide diethanolamine or coconut oil amide of diethanolamine, lauramide DEA, lauric diethanolamide, lauroyl diethanolamide, and lauryl diethanolamide.

## Contents

- 1 Safety concerns
- 2 See also
- 3 References
- 4 External links

## Safety concerns

DEA and its variants are suspected of increasing the risk

Diethanolamine	
	
IUPAC name	2,2'-Iminodiethanol
Other names	Diethanolamine, 2,2'-Iminobisethanol, Iminodiethanol, Bis(hydroxyethyl)amine, N,N-Bis(2-hydroxyethyl)amine, 2-[(2-Hydroxyethyl)amino]ethanol, 2,2'-Dihydroxydiethylamine, β,β'-Dihydroxydiethylamine, Diolamine, N-Ethylethanamine, DEA
Identifiers	
CAS number	111-42-2 ( <a href="http://www.emolecules.com/cgi-bin/search?t=ss&amp;q=111-42-2&amp;c=0&amp;v=">http://www.emolecules.com/cgi-bin/search?t=ss&amp;q=111-42-2&amp;c=0&amp;v=</a> )
PubChem	8113 ( <a href="http://pubchem.ncbi.nlm.nih.gov/summary/summary.cgi?cid=8113">http://pubchem.ncbi.nlm.nih.gov/summary/summary.cgi?cid=8113</a> )
EINECS number	203-868-0 ( <a href="http://ecb.jrc.it/esis/index.php?GENRE=ECNO&amp;ENTREE=203-868-0">http://ecb.jrc.it/esis/index.php?GENRE=ECNO&amp;ENTREE=203-868-0</a> )
ChEBI	28123 ( <a href="http://www.ebi.ac.uk/chebi/searchId.do?chebiId=CHEBI:28123">http://www.ebi.ac.uk/chebi/searchId.do?chebiId=CHEBI:28123</a> )
RTECS number	KL2975000
SMILES	OCCNCCO
InChI	InChI=1/C4H11NO2/c6-3-1-5-2-4-7/h5-7H,1-4H2
Properties	
Molecular formula	C <sub>4</sub> H <sub>11</sub> NO <sub>2</sub>
Molar mass	105.14 g/mol
Density	1.090 g/cm <sup>3</sup>
Melting point	28.0 °C
Boiling point	268.8 °C
Solubility in water	Soluble
Vapor pressure	< 0.01 hPa (20 °C)
Hazards	
R-phrases	R20/21/22, R36/37/38
Flash point	169 °C c.c.
Autoignition temperature	370 °C
Explosive limits	1.7 - 6.4 %

of cancer. DEA can combine with amines present in cosmetic formulations to form nitrosamines (N-nitrosodiethanolamine), which

Except where noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa)  
Infobox disclaimer and references

are known to be highly carcinogenic.<sup>[1]</sup> Studies also show that DEA directly inhibits fetal brain development in mice by blocking the absorption of choline, a nutrient required for brain development and maintenance.<sup>[2]</sup> DEA is also associated with miscarriages in laboratory studies.

It is also hygroscopic, so should be stored in an anhydrous environment whenever possible.

## See also

- Ethanolamine
- Triethanolamine

## References

1. ^ Prevent Cancer website entry on DEA (<http://www.preventcancer.com/consumers/cosmetics/diethanolamine.htm>)
2. ^ Study Shows Ingredient Commonly Found In Shampoos May Inhibit Brain Development (<http://www.sciencedaily.com/releases/2006/08/060803182218.htm>)

## External links

- chemical safety card for DEA ([http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/\\_icsc06/icsc0618.h](http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/_icsc06/icsc0618.h))
- Safety MSDS data (<http://ptcl.chem.ox.ac.uk/MSDS/DI/diethanolamine.html>)
- Toxicology and Carcinogenesis Studies (<http://www.mindfully.org/Pesticide/DEA-Diethanolamine-Studies-NTISJul99.htm>)

Retrieved from "<http://en.wikipedia.org/wiki/Diethanolamine>"

Categories: Amines | Alcohols | Amine stubs

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